LISTING OF CLAIMS:

1.-26. (Canceled)

27. (Currently Amended) A method of ~~increasing the yield of~~ facilitating the extraction of a mineral extracted from an ore having a plurality of phases of materials comprising causing weakening of inter-phase boundaries by exposing said ore to ~~high field strength~~ microwaves for a time of less than 0.1 second, the microwaves having a high enough field strength and being applied for a short enough time to cause differential thermal expansion between materials of different phases to cause weakening between phases whilst avoiding causing significant chemical changes to the ore, or at least to the mineral to be extracted.

28. (Currently Amended) A method according to claim 27 wherein said ore is exposed to ~~high field strength~~ the microwaves for a time of less than 0.01 second.

29. (Withdrawn) A method of microwave pre-treatment of a multi-phase material prior to a subsequent operation on the material to extract one material from the others, the method comprising providing a continuous feed of the multi-phase material through a region in which applied microwave radiation is present, at a speed to allow a throughput of multi-phase material of at least 500 tonnes per hour, said microwave radiation creating a power density of at least 10^{15} Wm^{-3}, said material experiencing said microwave radiation for a time of the order of 1ms or less, during which time it experiences one or a plurality of pulses of energy, and wherein the overall bulk temperature of the multi-phase material does not rise by more than 40°C, and wherein thermal stress is created between phase boundaries which is large enough to cause inter phase

fracturing, and wherein the temperature of said phases of said multi-phase material is kept low enough to avoid significant changes to the chemical properties of said different phase materials.

30. (Withdrawn) A method according to claim 29 wherein the or each said pulse has a duration of the order of not more than microseconds.

31. (Canceled)

32. (Previously presented) A method of continuous processing of ore or rocks comprising applying at least one of (i) high power density microwaves, or (ii) high/electric field strength microwaves, on a continuous basis to ore or rocks passing through a microwave cavity or zone to weaken said ore or rocks at a speed that is fast enough to avoid causing substantial chemical change to said ore or rocks, and subsequently passing said continuous flow of ore or rocks to a mechanical treatment machine and mechanically breaking up said ore or rocks.

33. (Currently Amended) A method of microwave ~~pre-~~treatment of a multi-phase material for facilitating the extraction of one phase of the material from another phase of the material, ~~prior to a subsequent operation on the material, said material having a first phase of material and a second phase of material,~~ the method comprising heating said material with microwaves, producing a power density of at least $10^9 Wm^{-3}$ in a continuous process in which said material moves into and through a microwave treatment area and experiences exposure to said microwaves in said treatment area for a time of the order of ½ second or less, said time being a short enough time to avoid causing substantial chemical changes to ~~one, or both of~~ said

phase[[s]] of said multi-phase material that is to be extracted.~~, and passing said material out of said treatment area for said subsequent operation.~~

34. (Previously presented) A method according to claim 33 wherein said material experiences microwaves in said treatment area for a time selected from the group consisting of: (i) of the order of 0.1 second or less; (ii) of the order of 0.01 second or less; and (iii) of the order of 0.001 second or less.

35. (Previously presented) A method according to claim 27 wherein pulses of microwaves are emitted substantially continuously and said pulses have a duration from the group consisting of (i) of the order of 1μs or less; (ii) of the order of 10μs or less; (iii) of the order of 100μs or less; (iv) of the order of 1ms or less; and (v) of the order of 10ms or less; of the order of 100ms or less.

36. (Previously presented) A method according to claim 35 wherein said substance, whilst in said treatment area, experiences a series of pulses of energy, said series having a number of pulses selected from the group consisting of: (i) of the order of 100 pulses or more; (ii) of the order of 50 pulses or more; (iii) of the order of 10 pulses or more; (iv) of the order of 5 pulses or more; (v) of the order of 2 pulses or more; and (vi) of the order of one pulse.

37. (Currently amended) A method ~~according to claim 36~~ of increasing the yield of a mineral extracted from an ore having a plurality of phases of materials comprising causing weakening of inter-phase boundaries by exposing said ore to high field strength microwaves for

a time of less than 0.1 second, the microwaves having a high enough field strength and being applied for a short enough time to cause differential thermal expansion between materials of different phases to cause weakening between phases whilst avoiding causing significant chemical changes to the ore, or at least to the mineral to be extracted, wherein ~~said~~ the power density produced by the microwaves in the treatment area is selected from the group consisting of the order of (i) $10^{15}Wm^{-3}$ or more; and (ii) $10^{16}Wm^{-3}$ or more, further wherein pulses of microwaves are emitted substantially continuously and said pulses have a duration from the group consisting of (i) of the order of 1μs or less; (ii) of the order of 10μs or less; (iii) of the order of 100μs or less; (iv) of the order of 1ms or less; and (v) of the order of 10ms or less; (vi) of the order of 100ms or less, and further wherein said ore, whilst in said treatment area, experiences a series of pulses of energy, said series having a number of pulses selected from the group consisting of: (i) of the order of 100 pulses or more; (ii) of the order of 50 pulses or more; (iii) of the order of 10 pulses or more; (iv) of the order of 5 pulses or more; (v) of the order of 2 pulses or more; and (vi) of the order of one pulse.

38. (Previously presented) A method according to claim 34 wherein the bulk temperature of said material is raised by a temperature selected from the group consisting of: (i) less than 200°C; and (ii) less than 150°C; whilst said material is in said treatment area.

39. (Currently amended) A method according to claim 38 wherein said bulk temperature of said material is raised by a temperature selected from the group consisting of: (i) of the order of, or less than[[: (i)]] 50°C; (ii) of the order of, or less than 20°C; and (iii) of the order of, or less than 10°C.

40. (Previously presented) A method according to claim 34 wherein said material flows through said treatment area at a rate of at least 100 tonnes an hour.

41. (Previously presented) A method according to claim 40 wherein said material flows through said treatment area at a rate of the order of 1000 tonnes an hour or more.

42. (Currently amended) A method according claim 34 wherein said ~~first~~ one phase comprises a desired mineral and said ~~second~~ another phase comprises a rock substrate surrounding said mineral, and wherein said microwaves ~~energy~~ significantly weakens the bond strength between said mineral and said surrounding substrate by causing local differential thermal expansion.

43. (Currently amended) A method according to claim 42 wherein said microwaves are ~~energy is~~ applied to said material for a short enough time to avoid causing substantial chemical changes to (i) said mineral; and/or (ii) both said material and substrate, that would detrimentally influence the efficiency of subsequent separation of said mineral and substrate.

44. (Currently amended) A method according to claim 33 wherein said ~~first~~ one phase comprises a mineral and said ~~second~~ another phase comprises water, and wherein said ~~pre-~~ treatment comprises dehydration, said ~~electromagnetic energy~~ microwaves drying said mineral.

45. (Previously presented) A method according to claim 44 wherein said microwaves also cause directly or indirectly fracturing or weakening of said mineral.

46. (Currently amended) A method according to claim 45 wherein said ~~first~~ one phase comprises a hydrated mineral selected from the group consisting of: (i) coal; (ii) other hydrated material.

47. (Currently amended) A method of separating a mineral from an ore comprising ~~pre-~~treating the ore in accordance with claim 33 and subsequently comminuting said ore.

48. (Previously presented) A method according to claim 34 wherein the power density within the treatment area produced by said microwaves is selected from the group consisting of the order of 10^{10} Wm^{-3}, or more; 10^{11} Wm^{-3}, or more; 10^{12} Wm^{-3}, or more; 10^{13} Wm^{-3}, or more, 10^{14} Wm^{-3}, or more; and 10^{15} Wm^{-3}, or more.

49. (Currently amended) A method of recycling articles which have parts made of different materials in them comprising ~~pre-~~treating said articles in accordance with claim 33 and then mechanically stressing said articles in order to break them up and facilitate the extraction of parts of said articles.

50. (Canceled)

51. (Canceled)

52. (Canceled)

53. (Canceled)

54. (Canceled)

55. (Canceled)

56. (Previously presented) A method according to claim 32 wherein the exposure of said ore or rocks to said high field strength microwaves is for a time selected from the group consisting of: (i) of the order of half a second or less; (ii) of the order of a quarter of a second or less; (iii) of the order of 0.1 second or less; and (iv) of the order of 0.01 seconds or less.